# Forest Insect Conditions on the Salmon National Forest 1968

The following is a discussion of the most important forest insect problems on the Salmon National Forest during 1968. Material for this report was compiled from aerial survey data and from special spruce budworm evaluation surveys.

Briefly, the major insect problems on the Forest in 1968 are the spruce budworm and Douglas-fir beetle. Spruce budworm-infested acreage increased somewhat over that in 1967, but not significantly. Feeding damage was, for the most part, very light and should continue that trend through 1969. Douglas-fir beetle populations and subsequently tree killing increased significantly with most damage occurring on the west side of the Forest. At this time, immediate control is neither practical nor possible. A more complete discussion of these two insect problems follows:

## Spruce budworm, Choristoneura fumiferana complex

The spruce budworm, down from a previous high of more than one million acres in 1964, still persists at very low levels throughout most of the Douglas-fir-true fir stands of the Forest. A slight resurgence in extent of defoliation was recorded in 1968 over that in 1967, but feeding damage continues to be light in almost all areas.

On-the-ground examinations were made, first, during June, to measure larval populations, and later, during August, to record defoliation. An additional trip was made early in September to collect egg masses. In addition to supplying information on trend, these visits permitted us to detect any significant change in the 1967 forecast and, of equal importance, to systematically correlate budworm numbers and/or resulting defoliation with earlier egg mass counts.

Defoliation counts were made from previously established egg mass plots in Hayden, Freeman, Derian, Agency, McDivitt, and Dahlonega Creeks. All of these areas exhibited less than 5 percent defoliation of new growth of Douglas-fir. These measurements correlated closely with the 1967 egg mass data, from which light (less than 15 percent) defoliation was forecast for most areas. The slight increase in noticeable acreage is probably due to differences in ocular estimates between aerial observers than to variations in the budworm population itself.

Major areas of light defoliation during 1967 were recorded in Spring, Porphyry, Silver, and Duck Creeks and in portions of the Idaho Primitive Area. Other than the Primitive Area, no observable defoliation showed up in any of these areas in 1968. At this time, the most significant and largest area of budworm damage is on the west side of Panther Creek and in Big Creek, which harbored damaging populations only three years ago. Other defoliated areas, beside the persistent infestation in the Primitive Area, are scattered throughout portions of the North Fork of the Salmon and Main Fork west of Salmon and in Silver and Yellowjacket Creeks in the southwest corner of the Forest. A breakdown of defoliated acreage by damage classes for the 5-year period 1964-1968 follows:

| Year | Defoliation Intensity | | | |
|---|---|---|---|---|
| | Light (Acres) | Medium (Acres) | Heavy (Acres) | Total (Acres) |
| 1964 | 64,000 | 320,000 | 958,000 | 1,342,000 |
| 1965 | 296,500 | 77,400 | 336,000 | 709,900 |
| 1966 | 495,700 | 25,900 | -- | 521,600 |
| 1967 | 25,600 | -- | -- | 25,600 |
| 1968 | 42,640 | 280 | -- | 42,920 |

This respite from heavy budworm feeding will give the most severely damaged trees an additional year to recover. Even more beneficial is the much needed relief given the smaller, understory trees, which usually are the first to succumb under repeated heavy feeding pressure. Indications at this time point to at least one more year of negligible to light budworm damage.

Predictions of the forthcoming budworm population level and resulting defoliation are made from numbers of freshly deposited budworm egg masses on Douglas-fir foliage taken from selected locations throughout the outbreak area. Because of the scattered nature of the various defoliated areas and because of the continuing trend of light feeding activity, only six egg mass plots were established in 1968. Three of the plots were newly established; only two plots were sampled both in 1967 and 1968. The sixth plot, Meyers Cove, was sampled in 1966 but not in 1967. The results of this survey and predicted trend and damage for 1969 follow:

| Area | Egg Masses/1000 sq. in. 1967 | 1968 | Expected Defoliation 1969 | Trend |
|---|---|---|---|---|
| Derian Creek | 3.10 | 1.2 | <15% | Static |
| Yellowjacket | .03 | 0.0 | <15% | Static |
| Meyers Cove | | 0.1 | <15% | Static |
| Spring Cr. | | 0.8 | <15% | Static |
| Little Deer Cr. | | 0.1 | <15% | Static |
| Squaw Camp Cr. | | 0.2 | <15% | Static |

It should be emphasized that when egg mass levels are this low, and although an overall population trend may be evident, accurate predictions as to both the extent and location of budworm damage for 1969 simply cannot be made. It is obvious that in known infestation areas where defoliation was observed and egg mass collections were made, defoliation will be negligible to light. Although somewhat speculative, it is nonetheless possible that new infestation centers may develop in new locations as they have in the past, but the location of these areas is unknown at this time. If they do develop, however, feeding damage will probably be very light. Our estimate, however, is that generally the extent of defoliated acreage will remain about the same as this year with no appreciable change in the present trend of relatively low budworm populations.

Douglas-fir beetle, Dendroctonus pseudotsugae Hopk.

The Douglas-fir beetle, for several years at a relatively low level, increased significantly throughout the Forest in 1968. A few of these infestations were groundchecked on the North Fork District (see 5230 memorandum of August 14, 1968), but the majority of infestation centers in other portions of the Forest went unvisited. All of the known infestation centers were detected during the aerial detection survey.

The largest single increase in beetle killed Douglas-fir, over that recorded in 1967, is in the Main Salmon River drainage in the northwest corner of the Forest. Killing of relatively large tree groups (20-50 trees) occurred in scattered locations in Horse, Bear Basin, Wheat, and Kitchen Creeks and throughout the smaller tributaries of the Salmon River between Horse and Papoose Creeks. Upwards of 500 old growth trees were killed in an extensive patch of Douglas-fir on the south side of Corn Creek. Elsewhere, relatively heavy group killing of less intensity (2-20 trees) occurred in Deer and Lion Creeks and in Yellowjacket Creek and its tributaries. This infestation is part of a general Douglas-fir beetle resurgence throughout other portions of southern Idaho.

This extensive southern Idaho infestation probably began during the winter and spring of 1964-65 when rain and windstorms topped Douglas-fir over wide areas on the Payette, Boise, and Sawtooth Forests, and to a lesser extent on the Salmon Forest. This downed material nurtured aggressive beetle populations which hit standing trees in 1966 and maintained a relatively high level ever since. The trend of the beetle and the length of time it can subsist and increase in standing trees on the Salmon Forest is unknown at this time. Similar infestations on neighboring Forests indicate no immediate let up in the present aggressive trend, however. We will have a better idea of trend this spring when we can get into the areas and observe conditions first-hand.

The very nature of the infestation makes immediate control impractical if not impossible. Most of the mortality is occurring in widely scattered groups in steep, inaccessible, and sometimes inoperable terrain. In most of these areas there is neither the volume nor access available to make salvage logging economical. The only alternative would be to remove large tree groups if they were readily accessible to existing logging shows. Although this would utilize timber that would otherwise be lost, it is doubtful whether it would have an immediate impact on the beetle population. Long-range management goals should be geared to removing most of the susceptible, old growth Douglas-fir in as short a time as possible.

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